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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,772	10/29/2003	Yosuke Miki	71450.0009	6726

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EXAMINER	
VERBITSKY, GAIL KAPLAN	

ART UNIT	PAPER NUMBER
2859	

DATE MAILED: 07/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/694,772	MIKI ET AL.	
	Examiner	Art Unit	
	Gail Verbitsky	2859	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-5 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-5 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☒ Other: attachments #1, #2, #3

DETAILED ACTION

Claim Objections

1. Claims 1 and 18 are objected to because of the following informalities:

Claims 1 and 18: A) Perhaps applicant should insert –having a generally narrow central portion—after "circuit board" in line 1 and after "widened end portions" in line 5 of claims 1 and 18, in order to clearly describe the invention and make it clear how the widened portions are related to the circuit board and to the rest of the base insulating layer respectively.

B) Perhaps applicant should insert –one of – after "insulating layer at" in line 12 of claim 1 and line 14 of claim 18, in order to clearly describe the invention, because it does not appear from the specification and the drawings, that the temperature detecting portion is formed on / at both widened end portions. Perhaps applicant should replace "portions" with –portion—in the very last line of claims 1 and 18.

C) Perhaps applicant should --of the flexible wired circuit board—after "widened end portions" in line 5 of claims 1 and 18, in order to clearly describe the invention.

Claim 18: Perhaps applicant should insert –temperature detecting—after "sensor-wiring" in line 12 in order to clearly describe the invention and to maintain proper antecedent basis with "the temperature detecting portion" in line 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-5 and 18 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In this case, it is not clear what the widened portions belong to. Are they a part of the circuit board or the base layer? Also, the widened portions are widened relative to what portions? Therefore, the claim language is confusing. Perhaps applicant should make changes suggested by the examiner in paragraph 1 of the Office action. Furthermore, please note, that in the rejection on the merits of claims 1 and 18, the examiner considers that the entire circuit board and the entire base insulating layer have the two end portions and the central portion widened.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1, 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schmermund (U.S. 6341892).

Schmermund discloses in Fig. 2 a device comprising a base insulating substrate/board having a conductive layer comprising a temperature detecting portion formed as a wiring made of a thin film platinum/ metal foil) 16 formed in a serpentine pattern (wiring folded in such continuous form that adjacent parts of the wiring parallel are spaced apart from each other at a predetermined interval), as shown in Fig. 2. The

portion 16, inherently, changes its resistivity (specific resistance) proportionally to a temperature change. As shown in Fig. 2, the conductor layer formed entirely to the base insulating layer in a predetermined (desired) pattern, wherein the base insulating layer has a generally rectangular flat strip shape (thin) with generally rectangular widened end portions A, B and a central portion C. The conductive layer, inherently, changes its resistance (specific) proportional to a temperature change.

The base insulating layer is formed on to one side (under one side) of the conductor layer. The temperature-detecting portion D is formed on the top of the base insulating layer at the generally rectangular flat widened portion A. (The numerals A-D have been added by the examiner, see attachment # 1 to the Office action).

Schmermund does not explicitly teach a flexible wired circuit board, as stated in the preamble of claim 1.

With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

Schmermund does not explicitly teach the limitations of claims 4 and 5.

For claim 4: the particular length of the temperature detecting portion, i.e., 50 mm or more, as stated in claim 4, absent any criticality, is only considered to be the "optimum" length of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. ***See In re Boesch, 205 USPQ 215 (CCPA 1980).***

For claim 5: the particular pitch, space between the adjacent parts of the temperature detecting portion, i.e., 100 microns or more, as stated in claim 5, absent any criticality, is only considered to be the "optimum" pitch of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. ***See In re Boesch, 205 USPQ 215 (CCPA 1980).***

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kiec et al. (U.S. 5134248) [hereinafter Kiec] in view of Sommer and. Wienand (U.S. 5037488).

Kiec discloses in Figs. 1 and 6B a flexible wired board/ device/ RTD comprising a base insulating layer/ barrier 16, a cover insulating layer/ barrier 16, a conductor layer comprising a resistive pattern/ metal foil/ film (temperature measuring sensor-wiring) 12 formed onto the base insulating layer 16 and covered with the cover insulating layer 16, and a main wiring (leads) 14. The resistive pattern 12 can be a serpentine shape, as shown in Fig. 6B, or any desired shape (col. 10, lines 1-12). Kiec states that any metal could serve as the resistive pattern 12 of the conductor (col. 5, lines 49-50). The base insulating layer has a generally rectangular flat strip shape (thin) with generally rectangular widened end portions A, B and a widened central portion C. The temperature measuring sensor wiring, as shown in Fig. 1, is positioned on the base insulating layer at its widened flat end portions and at its widened flat central portion. (The numerals A-C have been added by the Examiner, see attachment # 2 to the Office action).

Kiec does not teach that the conductor is a stainless steel, and that the insulating layers are polyimide, as stated in claim 18.

Sommer discloses in Figs. 4-5 a device in the field of applicant's endeavor wherein; a conductor layer is a stainless steel mask (foil) 18 is placed over an insulating substrate/ layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Kiec, so as to make the conductor layer of a stainless steel, as taught by Sommer, because the particular material, i.e., stainless steel, as stated in claim 18, for the conductor layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the conductor layer, disclosed by Kiec since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

Wienand discloses a device in the field of applicant's endeavor wherein, a temperature sensing resistance/ conductor layer disposed upon an elastic insulating base/ board/ carrier made of polyimide. As shown in Fig. 1, the conductor layer has a main wiring portion 3 and temperature sensing wiring portion 5 formed as one piece in a predetermined (desired) pattern.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Kiec, so as to make the base insulating layer of polyimide, as taught by Wienand, because this particular

material is very well known in the art as a heat resistant material, commonly used with temperature sensors for exhausts.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Kiec, so as to make distinct main portion and temperature measuring portion while in one piece, as taught by Wienand, because the particular shape of the conductor layer, absent any criticality, is only considered to be an obvious modification of the shape disclosed by Kiec because the court has held that a change in shape or configuration, without criticality, is within the level of skill in the art as the particular shape claimed by applicant is nothing more than one of numerous shapes that a person having ordinary skill in the art will find obvious to provide. *In re Dailey, 149 USPQ 47 (CCPA 1976).*

Also, with respect to the particular material, i.e., polyimide, to make the cover insulating layer, as stated in claim 18: the use of the particular material, i.e., polyimide, as stated in claim 18, for the cover layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the cover layer disclosed by Kiec since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

7. Claims 1, 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al. (U.S. 5053740) [hereinafter Schultz].

Schultz discloses in Fig. 2 a device/ circuit board for measuring temperature. The device comprises a conductor layer (metal foil) 16 formed in a serpentine shape (continuous shape, as claimed by applicant) and comprising a temperature measuring wiring 16 and a main wiring 16a and 16b. The temperature sensing wiring 16 is substantially positioned on one end portion A of a generally rectangular base insulating layer 14 attached one side (bottom side) the conductor. The main wiring 16a and 16b is positioned on the another end portion B of the base insulating layer, wherein, the base insulating layer comprising flat widened end portions A and B and a flat widened central portion C (the numerals A-C have been added by the examiner, see attachment # 3 to the Office action).

With respect to the preamble of claim 1: the preamble of the claims does not provide enough patentable weight because it has been held that a preamble is denied the effect of a limitation where the claim is drawn to a structure and a portion of the claim following the preamble is a self-contained description of the structure not depending for completeness upon the introductory clause. Kropa v. Robie, 88 USPQ 478 (CCPA 1951).

Schultz does not explicitly teach the limitations of claims 4 and 5.

For claim 4: the particular length of the temperature detecting portion, i.e., 50 mm or more, as stated in claim 4, absent any criticality, is only considered to be the "optimum" length of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. ***See In re Boesch, 205 USPQ 215 (CCPA 1980).***
For claim 5: the particular pitch, space between the adjacent parts of the temperature detecting portion, i.e., 100 microns or more, as stated in claim 5, absent any criticality, is only considered to be the "optimum" pitch of the temperature detecting portion used by Schmermund that a person having ordinary skill in the art at the time the invention was

made would have been able to determine using routine experimentation based, among other things, on the temperature range to be measured, etc. ***See In re Boesch, 205 USPQ 215 (CCPA 1980).***

8. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al. (U.S. 5053740) [hereinafter Schultz] in view of Sommer.

Schultz discloses the device as stated above in paragraph 7.

Schultz does not explicitly teach the limitations of claim 2.

Sommer discloses in Figs. 4-5 a device in the field of applicant's endeavor wherein; a conductor layer is a stainless steel mask (foil) 18 is placed over an insulating substrate/ layer.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Schultz, so as to make the conductor layer of a stainless steel, as taught by Sommer, because the particular material, i.e., stainless steel, as stated in claim 18, for the conductor layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the conductor layer, disclosed by Schultz since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

9. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schultz et al. (U.S. 5053740) [hereinafter Schultz] in view of JP 61179764A [hereinafter JP].

Schultz discloses the device as stated above in paragraph 7.

Schultz does not explicitly teach the limitations of claim 2.

JP teaches a conductor layer can be either aluminum or a stainless steel film.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Schultz, so as to make the conductor layer of a stainless steel, as taught by JP, because the particular material, i.e., stainless steel, as stated in claim 2, for the conductor layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the art at the time the invention was made using routine experimentation would have found obvious to provide for the conductor layer, disclosed by Schultz since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the invention. In re Leshin, 125 USPQ 416.

10. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Schmermund in view of JP 61179764A [hereinafter JP].

Schmermund discloses the device as stated above in paragraph 5.

Schmermund does not explicitly teach the limitations of claim 2.

JP teaches a conductor layer can be either aluminum or a stainless steel film.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the device disclosed by Schmermund, so as to make the conductor layer of a stainless steel, as taught by JP, because the particular material, i.e., stainless steel, as stated in claim 2, for the conductor layer, absent any criticality, is only considered to be the "optimum" material that a person having ordinary skill in the

art at the time the invention was made using routine experimentation would have found obvious to provide for the conductor layer, disclosed by Schmermund since it has been held to be a matter of obvious design choice and within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use of the

Response to Arguments

11. Applicant's arguments with respect to claims 1-5 and 18 have been considered but are moot in view of the new ground(s) of rejection necessitated by the present amendment.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

GKV

Gail Verbitsky
Primary Patent Examiner, TC 2800

July 08, 2005

Allowable Subject Matter

4. Claims 1-5 and 18 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art cited in the PTO-892 and not mentioned above disclose related devices and methods.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gail Verbitsky whose telephone number is 571/ 272-2253. The examiner can normally be reached on 7:30 to 4:00 ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Diego Gutierrez can be reached on 571/ 272-2245. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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GKV

Gail Verbitsky
Primary Patent Examiner, TC 2800

July 06, 2005

Schmermund (10694772)

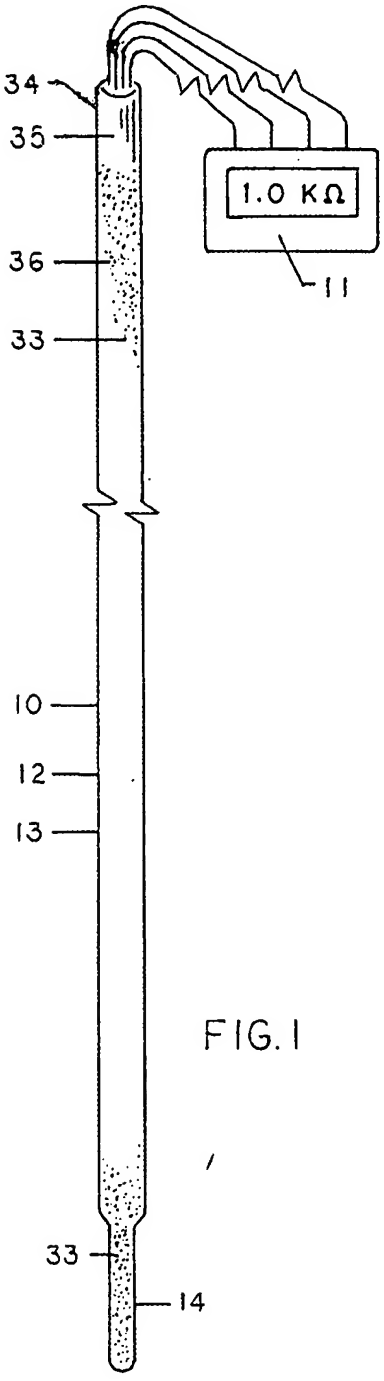

FIG. 1

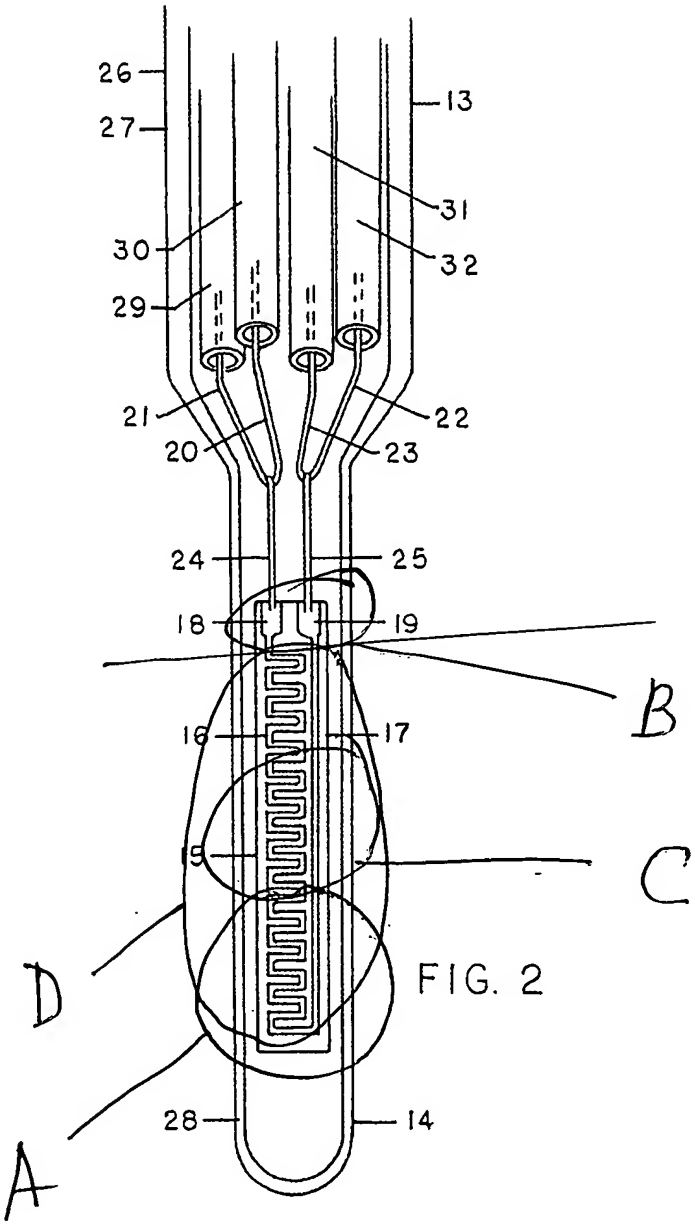

FIG. 2

attachment #1
(06 07/08/05)

[redacted] Rice (10694772)

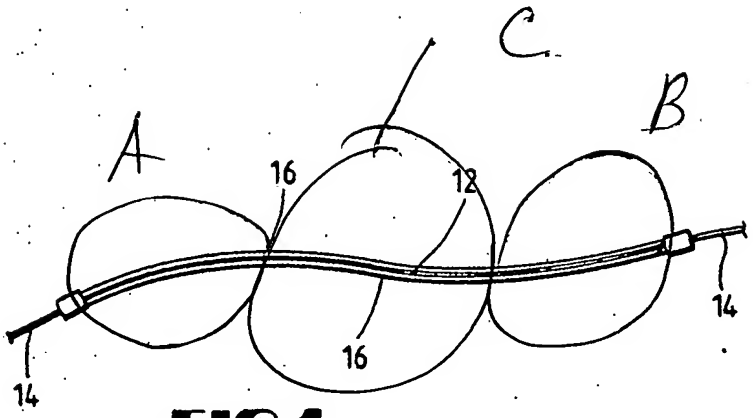

FIG.1

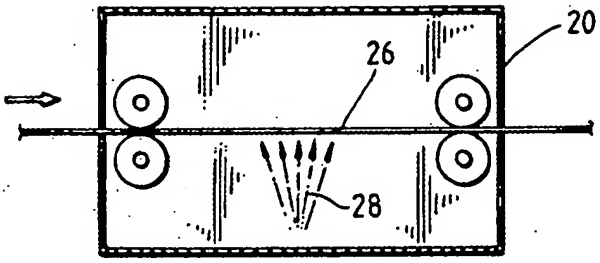

FIG.2

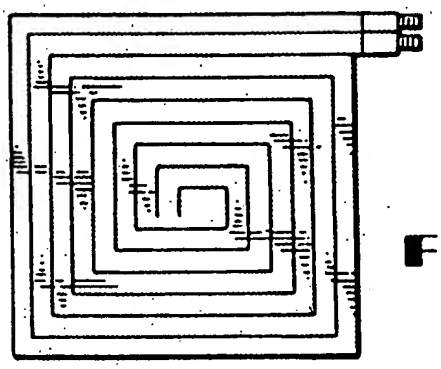

FIG.6B

(attachment #2)
06 07/08/05

Schultz

(10694772)

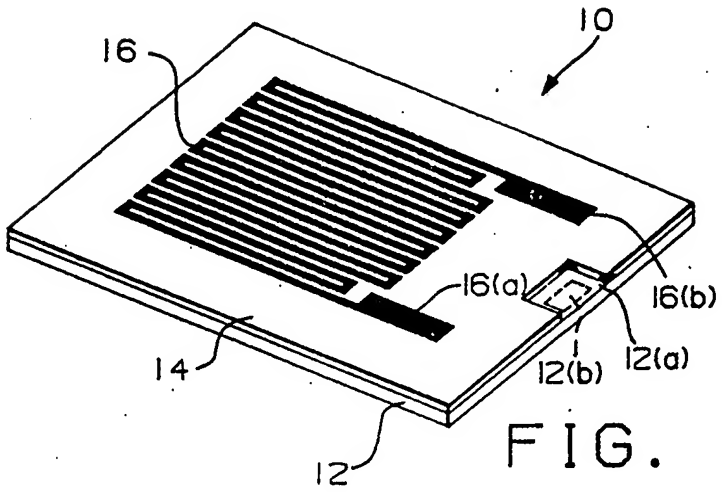

FIG. 1

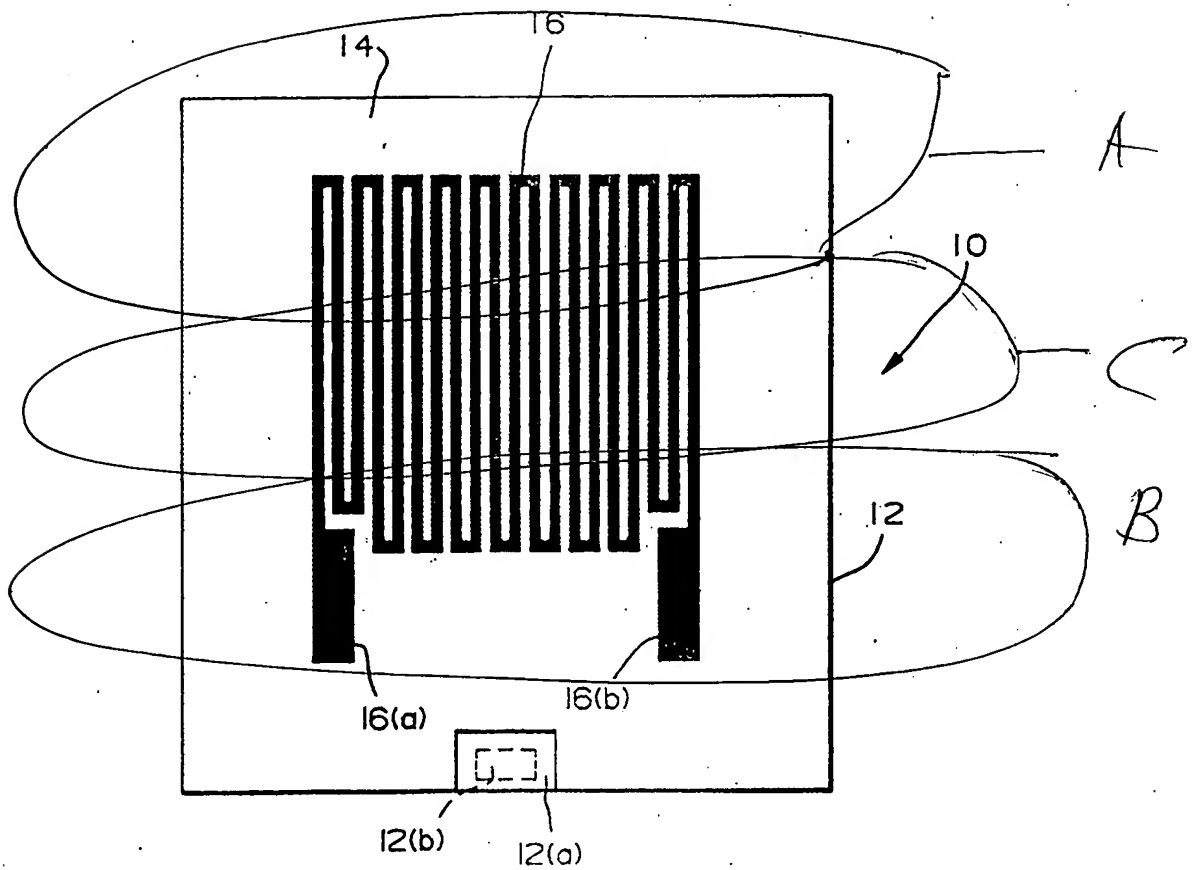

FIG. 2

Attachment #3
(07/08/05)